



# CTIA

*Building The Wireless Future™*

Cellular Telecommunications & Internet Association

February 25, 2003

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, Southwest  
12th Street Lobby, TW-A325  
Washington, DC 20554

**Re:** *Ex Parte* Presentation  
WT Docket No. 01-309

Dear Ms. Dortch:

On February 25, 2003, the Cellular Telecommunications & Internet Association (CTIA) represented by Diane Cornell, Vice President for Regulatory Policy and Ron Barnes, Director for External and Industry Relations, met with Jennifer Manner, Wireless Advisor to Commissioner Kathleen Abernathy.

The purpose of the meeting was to provide an overview of and discuss the current activities in which the wireless industry is engaged to address the usability of wireless products by people with hearing disabilities, and the technology issues related to interference mitigation and inductive coupling. The attached presentation was discussed at the meeting.

Pursuant to Section 1.1206 of the Commission's Rules, this letter is being filed with your office. If you have any questions concerning this submission, please contact the undersigned.

Sincerely,

Ron Barnes  
Director for External & Industry Relations



# CELLULAR TELECOMMUNICATIONS & INTERNET ASSOCIATION

## Wireless Phones and Hearing Aids

Jennifer Manner

February 25, 2003



## What Is The Goal?

- Usability - Any consumer who wants to use a wireless phone should be able to use one.

### Understanding the Goal

- Hearing Aid Compatibility (HAC) and interference are different issues
- Requiring internal coupling (HAC) will not solve interference problems
- Hearing aid interference is the root problem and is not specific to wireless phones
- The wireless industry wants to participate in a solution but the solution cannot rest on the wireless industry alone



## HAC and Interference

- **Hearing Aid Compatibility (HAC)** is a term of art that means the ability of a phone to inductively couple with a hearing aid equipped with a T-coil
- **Interference** refers to the noise generated in a hearing aid when the aid is exposed to sources of RF energy such as wireless phones, computer monitors, and fluorescent lights
- Wireline phones use speakers that are designed to provide T-coil compatibility with hearing aids equipped with a T-coil.
- However, wireline phones do not rely on RF energy to transmit calls so hearing aids do not experience interference with wireline phones.
- HAC standard is designed for wireline phones; use of this standard for wireless phones will not result in the desired outcome



# Hearing Aid Compatibility and Wireless

## **HAC can:**

- Benefit hearing aid wearers who have hearing aids with T-coils and who do not experience interference when using a wireless phone
- Provide inductive coupling only to the 20% of hearing aids that have T-coils
- Be found today in loopsets, other inductive coupling accessory devices and handsets currently on the market – giving T-coil users a choice of multiple compatibility solutions

## **HAC cannot:**

- Fix the problem of interference
- Be retrofitted into phones already on the market



# Industry Challenges

- Modification of wireless phones to minimize interference to hearing aids affects more than just the handset:
  - Implications for the basic functionality of wireless phones and could have serious implications for wireless networks and for other consumers
  - New industry standards would be required for transmit/receive bands
    - Requires product development, test, and implementation
  - Standards must meet regulations, carrier requirements, market viability, and globalization
- Manufacturers design and build phones on global platforms that cannot be easily or quickly modified and the addition of components in phones to provide coupling capability will require significant modifications of phones



# Wireless Industry Solutions

- The wireless industry has manufactured a number of phones that:
  - Work with existing hearing aids
  - Offer a variety of accessory devices for people who use hearing aids, including T-coil accessories such as loopsets; and is exploring potential Bluetooth applications
- Third party manufacturers are also developing accessory devices for people who use hearing aids
- Because not all hearing aids are compatible with these devices the wireless industry is:
  - Training personnel to better address issues specific to people with disabilities
  - Offering trial periods to consumers with hearing loss so they can “test drive” a particular phone
- The wireless industry has plans to expand consumer outreach and education efforts



## Hearing Aid Industry Solutions

- Increase hearing aid immunity – it is a known solution
  - Immunity: preventing the hearing aid from being affected by RF signals
- Inform consumers of options in the market place
- Provide information on hearing aid immunity levels
  - Hearing aid manufacturers can test hearing aids to wireless fields to judge immunity
- Inform consumers about hearing aid exchange and upgrade options
- Educate audiologists and hearing aid dispensers about hearing aid and wireless phone interactions



## International Solutions

- Europe and Australia – worked to resolve interference by increasing immunity in hearing aids
- Australia – “It was confirmed that the interference mechanism is intimately associated with the essential nature of the mobile telephone emissions and is not an incidental by-product which might for example be solved by improved shielding of the telephones.”
  - Interference To Hearing Aids by the Digital Mobile Telephone System, GSM; NAL Report No. 131, May, 1995



## Consumer Options

- Increase the distance of the phone from the hearing aid through use of accessory devices
  - Manufacturer developed loopsets
  - Third-party accessory devices
- Try different phones to see if one works
- Purchase immunized hearing aids
- Return hearing aids to manufacturers for increased immunity



## Conclusion

- The wireless industry wants to participate in a solution, but the solution cannot rest on the wireless industry alone
- Several important concepts:
  - Interference and hearing aid compatibility are different issues -- hearing aid interference is not specific to wireless phones
  - Requiring internal coupling (HAC) will only address 20% of hearing aids (those with T-coils), it will not solve interference problems
  - Unlike TTY, hearing aids are customized – a one size fits all approach to modifying handsets will not work



## Conclusion

- Steps to making digital wireless phones more usable by people with hearing aids:
  - Commitment to provide better information and education about options to consumers, wireless industry customer sales and service personnel, audiologists and hearing specialists, and hearing aid industry
  - Increased immunity of hearing aids
  - Cooperative efforts between the hearing aid and wireless industries to identify solutions using new technologies such as Bluetooth

